

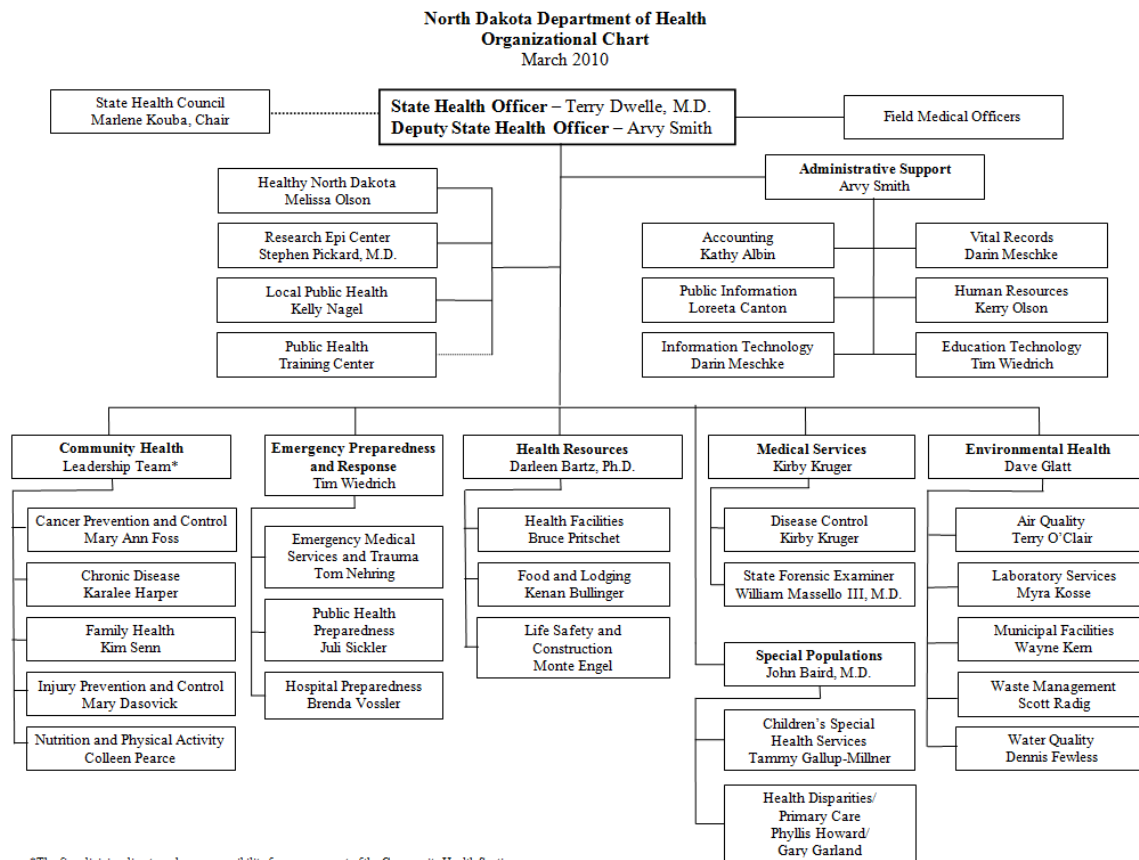
# NDGDA Safety & Env. Conference

## Regulatory Overview: Division of Air Quality

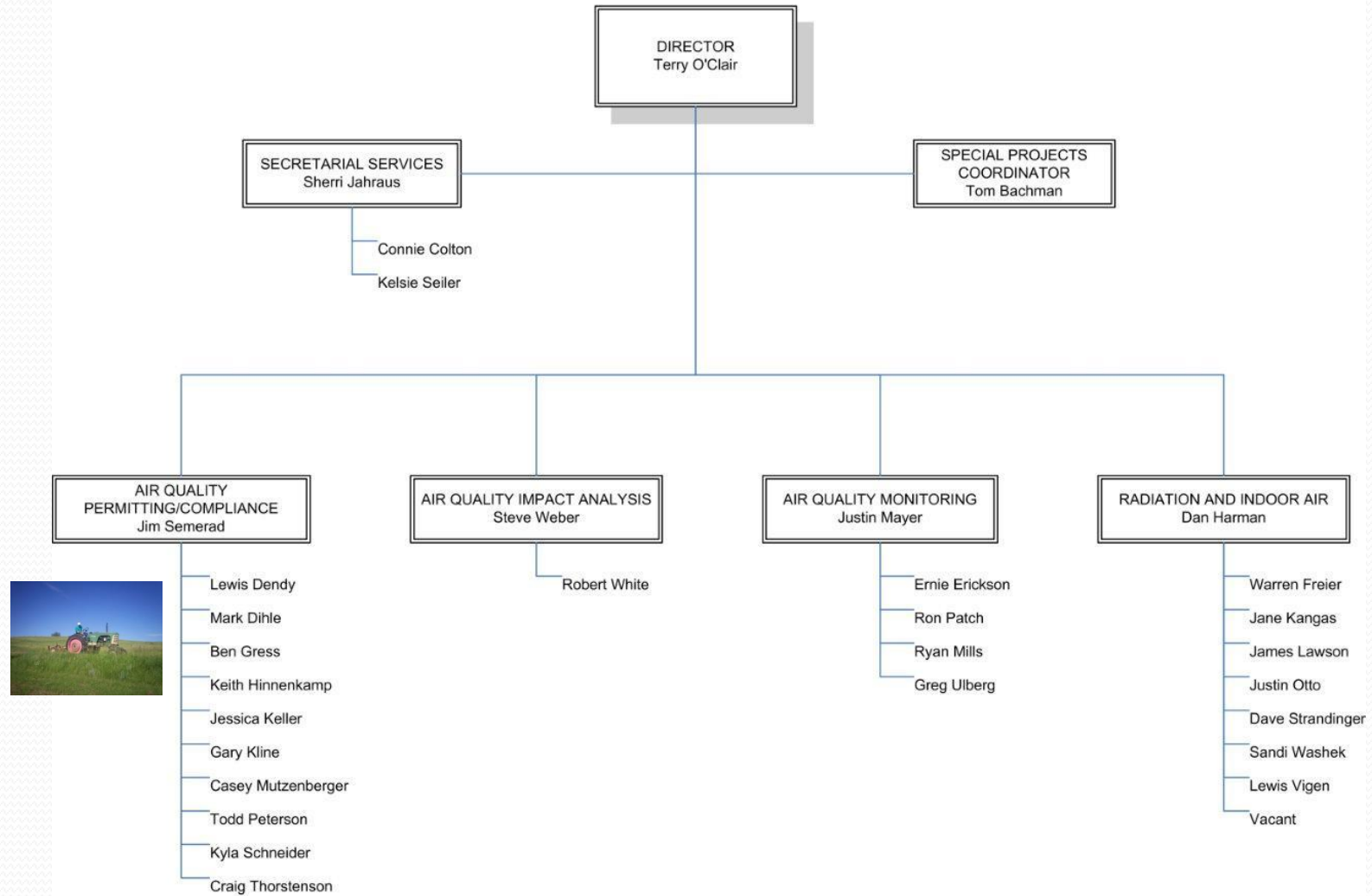
Presented by Benjamin Gress, Environmental Scientist



# The Division of Air Quality Where?



NORTH DAKOTA DEPARTMENT OF HEALTH  
DIVISION OF AIR QUALITY



9/20/2010

# Division of Air Quality

## *Programs within the Division:*

*AIR QUALITY PROGRAM*

*ASBESTOS CONTROL  
PROGRAM*

*INDOOR AIR PROGRAM*

*LEAD-BASED PAINT PROGRAM*

*RADON PROGRAM*

*RADIATION CONTROL  
PROGRAM*



# Air Quality Program



- Promotes clean air activities and enforces state and federal rules to minimize air pollution.
- More stringent than Federal in several areas (must be at least as stringent in all cases)
- North Dakota is one of only about a dozen states that meet all National Ambient (outdoor) Air Quality Standards.



# Common ND Sources





# What air regulations apply to grain handling facilities?

- State Air Pollution Control Rules Apply to all sources, including grain handling facilities operating in the state.
- Larger Facilities may be subject to Federal New Source Performance Standards 40 CFR 60 Subpart DD for grain elevators

# North Dakota Air Pollution Control Rules that commonly apply

- Chapter 33-15-03 – Restriction of emission of visible air contaminants
  - In general 20 percent opacity limit applies to vents or stacks.
- Chapter 33-15-05 – Emissions of Particulate Matter Restricted
  - Particulate matter limits based on throughput of process equipment.
- Chapter 33-15-12 – Standards of Performance for New Stationary Sources
  - Provides ND with the authority to enforce 40 CFR 60 rules, and includes Subpart DD



# North Dakota Air Pollution Control Rules that commonly apply cont.

- Chapter 33-15-14 – Designated Air Contaminant Sources, Permit to Construct, Minor Source Permit to Operate, Title V Permit to Operate.
  - Designates feed, grain, and seed handling and processing as a designated source of air pollution, and requires facilities to obtain a permit.
- Chapter 33-15-16 – Restriction of Odorous Air Contaminants
  - Odors limited from facility. (Generally not a concern unless rotting grain is present)
- Chapter 33-15-17 – Restriction of Fugitive Emissions
  - In general, 40 percent opacity limit established at the sources property line.

# What do we actually do?????



# Permitting

- The Division of Air Quality issues three types of permits to grain handling facilities:
  - Permit to Construct
    - Issued to a source for initial(new) construction, or for an expansion of an existing facility
  - General Permit to Operate
    - Issued for a period of five years to the majority of grain elevators that are not subject to 40 CFR 60 subpart DD
    - The Division utilizes the Public Service Commission's database of licensed entities during renewal.
  - Source Specific Permit to Operate
    - Issued for a five year period to a sources that are subject to 40 CFR 60 subpart DD

# Permit application forms

- Located at our website at <http://www.ndhealth.gov/AQ/>
- Or by contacting our Department

**NORTH DAKOTA**  
**DEPARTMENT of HEALTH**  
Air Quality

Air Quality • Laboratory Services • Municipal Facilities • Waste Management • Water Quality • EHS Home

[Office Locations](#)[Public Notices](#)[Publications](#)[Air Quality Program](#)[Radiation Control](#)[Asbestos Control](#)[Indoor Air Quality](#)[Lead Based Paint](#)[Radon](#)[Notices/Dockets](#)[Links](#)[Contact Us](#)**Division of Air Quality**Terry O'Leary, Director [\[Email\]](#)

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918 East Divide Avenue, 2nd Floor

Bismarck, ND 58501-1947

The North Dakota Department of Health, Division of Air Quality works to safeguard the environment for North Dakota. Programs within the Division deal with issues that affect the comfort, health, safety and well being of all North Dakota citizens and their environment. Enforcement of state and federal environmental laws is accomplished through permitting, inspection, sampling, analytical services and monitoring activities of the division.

**AIR QUALITY PROGRAM:**

The air quality program is responsible for protecting and fostering the state's air quality resources. The program promotes clean-air activities and initiates enforcement action to correct existing air pollution problems.

**RADIATION CONTROL PROGRAM:**

The Radiation Control Program monitors the development and utilization of sources of ionizing and non-ionizing radiation to protect the health and safety of the radiation user and the general public. Radon continues to be a concern to North Dakota residents. The Radon Program promotes testing and mitigation of radon, as well as use of radon-resistant construction techniques in newly built homes.

**ASBESTOS CONTROL PROGRAM:**

The Asbestos Control Program was established to ensure that asbestos materials in public and private buildings are managed in a manner to minimize exposure to workers and the public. The program licenses and certifies asbestos workers.

**INDOOR AIR PROGRAM:**

The Indoor Air Quality Program provides information and technical assistance to the public concerning various indoor air quality issues. The types of issues include, but are not limited to, odor concerns, indoor mold growth, carbon monoxide exposure, and proper ventilation.

**LEAD-BASED PAINT PROGRAM:**

The Lead-based Paint Program is established to ensure that Lead-based Painted materials in Pre 1978 Target Housing and Child occupied Facilities are managed in a manner to minimize exposure to workers and the public. The program licenses and certifies Lead-based Paint workers and trainers.

**RADON PROGRAM:**

The primary goal of the Indoor Radon Program is to reduce the level of indoor radon in the state of North Dakota to concentrations less than the Environmental Protection Agency's action level of 4pico-Curies per liter (pCA). The Indoor Radon Program focuses its efforts in the following five areas:

- ◆ Radon awareness
- ◆ Radon resistant new construction
- ◆ Real estate transaction disclosure and testing
- ◆ Public school testing and mitigation
- ◆ Residential testing and mitigation



# Permit application forms



**PERMIT APPLICATION - GRAIN, FEED, FERTILIZER OPERATIONS**  
**NORTH DAKOTA DEPARTMENT OF HEALTH**  
**DIVISION OF AIR QUALITY**  
**SFN 8524 (1-09) AP 104**

**GENERAL**

Name of Firm or Organization		Date of Application	
Person Submitting Application	Title	Telephone Number	
Person to Contact on Air Pollution	Title	Telephone Number	
Email Address	Public Service Commission Facility License No.	Fax Number	
Mailing Address	City	State	Zip Code
Plant Location (No. & Street)	City	State	Zip Code
Facility Location	Sec.	Twp.	Rge.
			County

**PROCESSES TO BE PERFORMED AT FACILITY ("X" all that apply and complete attached tables.)**

GRAIN HANDLING AND PROCESSING	FEED PROCESSING	FERTILIZER HANDLING AND MIXING
<input type="checkbox"/> Receiving and Shipping <input type="checkbox"/> Grain Cleaning <input type="checkbox"/> Grain Drying <input type="checkbox"/> Grain Polishing <input type="checkbox"/> Grain Milling <input type="checkbox"/> Grain Scalping	<input type="checkbox"/> Feed Grinding <input type="checkbox"/> Feed Rolling <input type="checkbox"/> Feed Mixing or Blending <input type="checkbox"/> Hammermill Operations	<input type="checkbox"/> Blending and Mixing <input type="checkbox"/> Bagging <input type="checkbox"/> Bulk Selling <input type="checkbox"/> Bagged Fertilizer Buying - Selling <input type="checkbox"/> Liquid Fertilizer Blending - Mixing <input type="checkbox"/> Liquid Fertilizer - Selling

**OPERATIONS**

OPERATING SCHEDULE	HOURS PER DAY	DAYS PER WEEK	WEEKS PER YEAR	PERCENT OF OPERATION			
				JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
GRAIN HANDLING							
FEED PROCESSING							
FERTILIZER HANDLING							
<b>TYPES OF GRAIN HANDLED:</b> <input type="checkbox"/> Wheat <input type="checkbox"/> Barley <input type="checkbox"/> Corn <input type="checkbox"/> Edible Beans <input type="checkbox"/> Other						Annual Throughput of Grain Bushels	
<input type="checkbox"/> Oats <input type="checkbox"/> Rye <input type="checkbox"/> Flax <input type="checkbox"/> Soy Beans <input type="checkbox"/> Sunflowers							

**STORAGE CAPACITY**

Permanent Storage Capacity (Bushels)		Temporary Storage Capacity (Bushels)	
Existing	New	Existing	New

I, the undersigned owner/applicant, or authorized representative of the applicant am fully aware that the statements made in this form and the attached exhibits and statements constitute the application for a Permit to Construct and/or a Permit to Operate from the North Dakota Department of Health, and I certify that the information is true, correct, and complete to the best of my knowledge and belief.

**NOTE:** Authorized representative of application must attach a Letter of Authorization

Signature of Applicant X	Date
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# Permitting process

- Source submits a permit application and \$150 filing fee to the Department outlining a new facility or expansion of an existing facility
  - Division personnel review the application for completeness and begin processing
  - An air quality effects analysis is completed for the project
  - If compliance with air rules is expected, a permit to construct is issued for the project.

# Permitting process cont.

- The facility notifies the Department after construction of the facility is complete
- Department personnel inspect the facility and determine if it was constructed as applied for, and if it is operating in compliance with air quality rules
- If in compliance, a permit to operate is then issued to the facility

# Permit to Operate

## AIR POLLUTION CONTROL MINOR SOURCE GENERAL PERMIT TO OPERATE

Pursuant to Chapter 23-25 of the North Dakota Century Code, and the Air Pollution Control Rules of the State of North Dakota, and in reliance on statements and representations heretofore made by the permittee designated below, a Permit to Operate is hereby issued authorizing such owner to operate the emission unit(s) at the location designated below. This Permit to Operate is subject to all applicable rules and orders now or hereafter in effect of the North Dakota Department of Health and to any conditions specified below:

1. Permittee:  A. Name: Corn & Beans Inc.  B. Address: 100 Wheat Ave Bismarck, ND 58501	2. A. Permit Number: GPG99999 Renewal No.: 0 Revision No.: 0  B. Permit Description:  True Minor Source: NDAC 33-15-14-03
3. Source Name & Location:  A. Name: Corn & Beans Inc.  B. Address: 100 Wheat Ave Bismarck, ND 58501	4. Source Type:  Grain Handling Facility
5. Expiration Date: January 1, 2015	
6. Description: The permittee operates a grain elevator in North Dakota. The facility is primarily engaged in buying, storing, and/or marketing of grain and other agricultural products. Emissions from this facility may originate from receiving, cleaning, drying, moving product within the facility, and shipment of product.	

# Permit to Operate

- The Permit to Operate lists emission limits and conditions that must be followed to ensure the facility is in compliance with the applicable air quality rules.
- General Permits list the same requirements for every facility
- Source specific permits list requirements specific to emission points and operations at the source and are issued primarily to sources subject to the federal rule.



# Permit to Operate cont.

- Permit Emission limits examples
  - Opacity

The opacity emission limit shall be as follows:

Existing Facilities:

40% for facilities which were constructed on or before July 1, 1970.

New Facilities:

20% for facilities for which construction commenced after July 1, 1970.

# What is Opacity?

- Opacity is the obscuring power of a plume.
- Measured by EPA Reference Method 9
  - 0% opacity blocks no light



# What is Opacity?

- 100% opacity blocks all light



# Permit to Operate cont.

- Permit Emission limit example
  - Particulate

The emission limit for process rates up to 30 tons/hr shall be determined by the following equation:

$$E = 4.10 p^{0.67}$$

For process rates in excess of 30 tons/hr, the allowable emission limit shall be determined by the following equation:

$$E = 55.0 p^{0.11} - 40$$

Where  $E$  = allowable emission limit in lb/hr, and  
 $p$  = process weight rate in tons/hr

# Permit to Operate cont.

- Example Permit Conditions (probably the two most important!)
  - **Alterations, Modifications or Changes:** Any alteration, rebuilding, repairing, expansion, change in the method of operation, or change of location of the facility which results in the emission of an additional type or greater amount of air contaminants or which results in an increase in the ambient concentration of any air contaminant, must be reviewed and approved by the Department prior to the start of such alteration, rebuilding, repairing, expansion, change in the method of operation, or change of location
  - **Operation of Air Pollution Control Equipment:** The owner/operator shall maintain and operate all air pollution control equipment in a manner consistent with good air Pollution control practice for minimizing emissions.



# 40 CFR 60 Subpart DD

- NSPS for grain elevators Promulgated Aug. 3, 1978
  - Federal rule attempted to separate small country elevators from large grain terminal elevators
  - Determined applicability based on permanent storage capacity
    - Greater than 2.5 million bushels at grain elevators
    - Greater than 1.0 million bushels if located at a mill or extraction plant

# 40 CFR 60 Subpart DD cont.

- Established particulate and opacity limits on grain handling that are more stringent than state rules.
- Dryer limits
  - Column Dryers perforation less than 0.094 inches
  - Rack Dryers screen filter maximum of 50 mesh
- Process emission limits
  - 0.01 grains/dscf (there are 7000 grains in a pound)
  - 0 percent opacity

# 40 CFR 60 Subpart DD cont.

- Fugitive emissions limits
  - Truck unloading station
    - 5 percent opacity
  - Railcar loading and unloading stations
    - 5 percent opacity
  - Truck loading station
    - 10 percent opacity
  - Any grain handling operation
    - 0 percent opacity



# 40 CFR 60 Subpart DD cont.

## Exemptions

- Additional gravity load out spouts to existing grain transfer bins
- Installation of automatic grain weighing scales
- Replacement of motor drives on existing equipment
- Installation of permanent storage capacity with no increase in hourly grain handling capacity
- If additional storage capacity increases total permanent storage capacity of the facility above DD thresholds, any associated source units would be subject to the rule requirements

# Compliance

- Imperative that facility managers and operators are familiar with the permit to operate
- Air pollution control equipment must be maintained and replaced if necessary.





# Compliance cont.

- Any expansion or significant change in grain handling operations i.e. new storage, receiving pits etc need to be approved by the Department.
- Retrofitting units to ensure compliance after the construction is complete is significantly more costly.



# Compliance cont.

- After initial inspection, the Department normally conducts facility inspections on a complaint response basis
- Proper maintenance of equipment and good housekeeping practices will generally keep complaints to a minimum.



# Compliance cont.

- All complaints are investigated
  - May include
    - Contacting the facility manager by phone
    - Having pictures of the facility sent in
    - Facility inspection by Department personnel
    - Meeting with both the complainants and facility managers
    - If applicable, contacting personnel at the facility's corporate level
- Not all complaints are found to have merit
  - Many times other forces are at play which cause a compliant



# Compliance cont.



# Dust and Chaff

- The Department realizes that no facility can realistically contain 100 percent of dust and chaff generated during normal operations
  - Although natural, grain dust and chaff are still a considered a pollutant
    - Deposits that make it off the facility's property are still the responsibility of the facility
- Problems generally arise with older facilities, during peak times of grain handling, or when air pollution control equipment is not maintained, damaged, removed.

# Problems?













# Malfunctions

- Air pollution control equipment malfunctions can quickly lead to problems and citizen complaints, especially if facility is located near residential areas.





# Chaff Deposits



# Chaff Deposits











# Facility operations

- General appearance of a facility can give the inspector a good indication of how a facility is operated.
- If properly maintained, a facility should have no trouble operating in compliance with the rules





# Facility operations

- Good housekeeping usually indicates good maintenance, and good overall grain handling operations.



# Enforcement

- Depending on the severity and duration of a violation, the Department may take enforcement action against a facility
  - Enforcement may result in an consent agreement between the Department and the facility
    - Can include
      - Increased monitoring requirements
      - Required air pollution control equipment upgrades
      - Supplemental community environmental projects
      - Cash fines



# Enforcement cont.

During an enforcement action, the Department's primary goal is to bring the facility into compliance with all state and federal rules and with the permit to operate.





# Overall Goals

- To provide a streamlined and effective permitting and compliance program for all grain handling facilities
- To maintain an open working relationship with facilities
- To ensure that through compliance and enforcement the impact on people of North Dakota from grain handling operations are minimized.

# Where are We?

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